

AMENDED CLAIM SET:

1. & 2. (cancelled).

3. (currently amended) A propylene random copolymer particle having a trilayer structure consisting of a first skin layer [L1] that is present at the outermost crust, a second skin layer [L2] that is internally contacting with the first skin layer, and a core [L3] that is present inner to the second skin layer,

wherein, in the transmission electron microscope (TEM) photograph (magnification $\times 4000$) of an ultrathin section of the core [L3] after metal oxide staining, no stained component which has a particle diameter of 3 μm or greater is observed, and

wherein the propylene random copolymer satisfies the following requirements [1] to [4]:

[1] the concentration (P_a , % by mole) of a ~~skeletal~~ constituent of the copolymer derived from propylene (a), and the concentration (P_x , % by mole) of a ~~skeletal~~ constituent of the copolymer derived from at least one olefin selected from ethylene (b) and α -olefins having 4 to 20 carbon atoms (c), each of which is contained in the propylene random copolymer, satisfy the following relational expressions (Eq-1) to (Eq-3):

$$85 \leq P_a < 100 \quad (\text{Eq-1})$$

$$0 < P_x \leq 15 \quad (\text{Eq-2})$$

$$P_a + P_x = 100 \quad (\text{Eq-3});$$

[2] the concentration (P_a , % by mole) of the ~~skeletal~~ constituent of the copolymer derived from propylene (a) contained in the propylene random copolymer, and the melting point (T_m)

measured with a differential scanning calorimeter satisfy the following relational expression (Eq-4):

$$135 - 4 \times (100 - Pa) < T_m < 165 - 4 \times (100 - Pa) \text{ (Eq-4);}$$

[3] the total amount of 2,1-bonded and 1,3-bonded non-stereoregular fractions is less than or equal to 0.2% by mole; and

[4] the amount of the n-decane (nC_{10})-soluble fraction is less than or equal to 2.0% by weight.

4. (original) The propylene polymer particle according to claim 3, wherein the first skin layer [L1] is made of polyethylene, the second skin layer [L2] is made of a polypropylene having a melting point (T_m) of 130°C or higher as measured by DSC, and the core [L3] is made of a propylene homopolymer, or a copolymer obtained from propylene and at least one olefin selected from ethylene and an α -olefin having 4 or more carbon atoms.

5. (previously presented) The propylene polymer particle according to claim 4, wherein the first skin layer has an intrinsic viscosity $[\eta]$ of 3 (g/dl) or greater and a density of 910 (kg/m^3) or greater, and the second skin layer has an intrinsic viscosity $[\eta]$ in the range of 0.5 to 5 (g/dl).

6. (withdrawn) A method for preparing a propylene polymer according to any one of claims 3, 4, 5, 14, and 15, wherein the following three processes [P-1], [P-2] and [P-3] are sequentially carried out in the presence of a metallocene catalyst:

Process [P-1]: Process for preparing a polymer precursor $[P_1]$ by polymerizing ethylene;

Process [P-2]: Process for preparing a prepolymer [P₂] by polymerizing propylene in an amount of 50 to 20,000 g/g-cat in the presence of the polymer precursor [P₁] at a temperature of 5 to 40°C; and

Process [P-3]: Process for preparing a propylene polymer [P₃] by homopolymerizing propylene or by copolymerizing propylene with at least one olefin selected from ethylene and an α -olefin having 4 or more carbon atoms in the presence of the prepolymer [P₂].

7. (withdrawn) The method for preparing a propylene polymer particle according to claim 6, wherein the polymer precursor [P₁] prepared in the process [P-1] is washed with an aliphatic or alicyclic hydrocarbon having 5 to 12 carbon atoms.

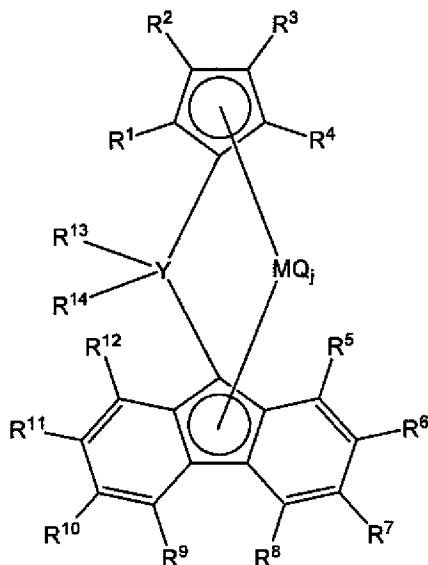
8. (withdrawn) The method for preparing a propylene polymer particle according to claim 6, wherein at least one process selected from the process [P-1], process [P-2] and process [P-3] is carried out in the presence of a polyoxyalkylene compound represented by the following formula [I]:



wherein R¹, R² and R³ may be identical with or different from each other and are selected from a hydrogen atom, an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms and an acyl group having 1 to 20 carbon atoms; and k represents the average number of the repeating units and is in the range of 1 to 100.

9. (cancelled).

10. (withdrawn) The method for preparing a propylene polymer particle according to claim 6, wherein the metallocene catalyst contains a metallocene compound represented by the following formula [II] as an essential component:



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} and R^{14} may be identical with or different from each other and are selected from hydrogen, a hydrocarbon group and a silicon-containing group; M is a transition metal belonging to Group 4; Y is a carbon atom or a silicon atom; Q may be selected from halogen, a hydrocarbon group, an anionic ligand and a neutral ligand capable of coordination with a lone electron pair, combined in identical or different combinations; and j is an integer of 1 to 4.

11. (cancelled).

12. (previously presented) A molded product obtained by molding the propylene polymer particle according to any one of claims 3, 4, 5, 14, and 15.

13. (previously presented) The molded product according to claim 12 or 18, which is a sealant film, a shrink film or a metal-deposited film.

14. (previously presented) The propylene polymer particle according to claim 3, which has a melting point (T_m) of 140°C or lower.

15. (previously presented) The propylene polymer particle according to claim 14, wherein the first skin layer [L1] is made of polyethylene, the second skin layer [L2] is made of a polypropylene having a melting point (T_m) of 130°C or higher as measured by DSC, and the core [L3] is made of a propylene homopolymer, or a copolymer obtained from propylene and at least one olefin selected from ethylene and an α -olefin having 4 or more carbon atoms.

16. (previously presented) A pellet obtained by melting and kneading the propylene polymer particle according to any one of claims 3, 4, 5, 14, and 15.

17. (previously presented) A pellet obtained by adding at least one additive, selected from the group consisting of anti-oxidants, ultraviolet absorbers, antistatic agents, nucleating agents, lubricants, fire retardants, antiblocking agents, coloring agents, inorganic or organic fillers, and synthetic resins, to the propylene polymer particle according to any one of claims 3, 4, 5, 14, and 15 to form a mixture, and then melting, kneading, and pelletizing said mixture.

18. (previously presented) A molded product obtained by molding the pellet according to

claim 16.

19. (previously presented) A molded product obtained by molding the pellet according to claim 17.

20. (new) A propylene random copolymer particle having a trilayer structure comprising a first skin layer [L1] that is present at the outermost crust, a second skin layer [L2] that is internally contacting with the first skin layer, and a core [L3] that is present inner to the second skin layer,

wherein, in the transmission electron microscope (TEM) photograph (magnification $\times 4000$) of an ultrathin section of the core [L3] after metal oxide staining, no stained component which has a particle diameter of 3 μm or greater is observed, and

wherein the propylene random copolymer satisfies the following requirements [1] to [4]:

[1] the concentration (P_a , % by mole) of a constituent of the copolymer derived from propylene (a), and the concentration (P_x , % by mole) of a constituent of the copolymer derived from at least one olefin selected from ethylene (b) and α -olefins having 4 to 20 carbon atoms (c), each of which is contained in the propylene random copolymer, satisfy the following relational expressions (Eq-1) to (Eq-3):

$$85 \leq P_a < 100 \quad (\text{Eq-1})$$

$$0 < P_x \leq 15 \quad (\text{Eq-2})$$

$$P_a + P_x = 100 \quad (\text{Eq-3});$$

[2] the concentration (P_a , % by mole) of the constituent of the copolymer derived from

propylene (a) contained in the propylene random copolymer, and the melting point (T_m) measured with a differential scanning calorimeter satisfy the following relational expression (Eq-4):

$$135 - 4 \times (100 - P_a) < T_m < 165 - 4 \times (100 - P_a) \text{ (Eq-4);}$$

[3] the total amount of 2,1-bonded and 1,3-bonded non-stereoregular fractions is less than or equal to 0.2% by mole; and

[4] the amount of the n-decane (nC_{10})-soluble fraction is less than or equal to 2.0% by weight.